REMARKS

Claim 10 was rejected under 35 U.S.C.§ 103(a) as being unpatentable over Applicants admitted prior art in view of Kashiwara et al. (U.S. Patent No. 4,401,915). Claims 1 and 3-9 are allowed.

In response, claim 10 has been canceled, to hereby place the case in condition for allowance.

Withdrawal of all rejections, and allowance of claims 1 and 3-9 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE TITLE:

Please replace the Title of the Invention with the following new Title:

SPARK PLUG HAVING GROUND ELECTRODE HAVING CROSS SECTION WITH SIDE SURFACE OPPOSITE CENTER ELECTRODE OF SMALLER WIDTH THAN OPPOSING SIDE SURFACE

IN THE SPECIFICATION:

The specification is changed as follows:

Page 6, first full paragraph:

Referring now to Figs. 2A-2C and 3A-3B, the ground electrode 116 has a welded portion 116c which has such a cross section as shown in Figs. 3A and 3B. Namely, the cross section of the welded portion 116C is polygonal and has a six corners R1 to R6. The cross section has a pair of opposite sides one of which corresponds to the side surface 116b of the ground electrode 116 and faces an outer circumferential periphery 37a of the front end face 37 of the metallic shell 30. The side corresponding to the side surface 116b ranges from the corner R1 to the corner R4. The side surface 116b is shaped so as to expand or protrude outward and contact or coincide at the corners R1 and R4 with the outer circumferential periphery 37a of the front end face 37 as shown in Fig. 3A. Namely, the side surface 116b has a central side surface section (i.e., a surface section between the corners R2 and R3) of the width [L6] L5 and parallely opposite to a central side surface section of the side surface 116a and a pair of oblique side surface sections

(i.e., a surface section between the corners R1 and R2 and a surface section between the corners R3 and R4) at the opposite ends of the central side surface section. The side surface 116a of the ground electrode 116 includes a side surface portion 116g facing the front end face of the center electrode 12. The side surface 116a ranges from the corner R5 to the corner R6. Namely, the side surface 116a has the aforementioned central side surface section and a pair of rounded side surface sections at the opposite ends of the central side surface section.

IN THE CLAIMS:

Claim 2 is canceled.

The claims are amended as follows:

1. (Amended) A spark plug for an internal combustion engine comprising:

a metallic shell having an externally threaded portion;

an insulator disposed within the metallic shell and having an axial bore;

a center electrode disposed within the axial bore of the insulator; and

a ground electrode connected to a front end face of the metallic shell and having an end opposite to [an] a front end face of the center electrode;

wherein a cross section of the ground electrode is so shaped as to provide a side surface at one of opposite sides which faces an outer circumferential periphery of the front end face of the metallic shell, with a narrower central side surface section than that of a side surface at the other of the opposite sides, the central side surface section at one of the opposite sides being [parallely] parallel and opposite to the central side surface section at the other of the opposite sides, and

wherein the cross section of the ground electrode is so shaped as to satisfy $(L/2)^2 + \{t + (B/2)\}^2 = (A/2)^2$, $L = 2[(A/2)^2 - \{(B/2) + t\}^2]^{1/2}$, $(A - B)/3 < t \leq (A - B)/2$, $2[(A/2)^2 - \{(B/2) + t\}^2]^{1/2} < L < 3[(A/2)^2 - \{(B/2) + t\}^2]^{1/2}$, $(M - 1.7P) \leq A < (M - 1.5P)$, where M is a nominal diameter of the externally threaded portion, P is a pitch of the externally threaded portion, A is an outer diameter of the front end face of the metallic shell, B is an inner diameter of the front end face of the metallic shell, L is the width of the surface portion of the inner side surface of the ground electrode, and t is a maximum thickness of the ground electrode.

10. (Amended) A spark plug for an internal combustion engine comprising:

a metallic shell having an externally threaded portion;

an insulator disposed within the metallic shell and having an axial bore;

a center electrode disposed within the axial bore of the insulator; and

a ground electrode connected to a front end face of the metallic shell and having an end opposite to [an] a front end face of the center electrode;

wherein the ground electrode has such a cross section that includes a first pair of opposite sides one of which is arcuated so as to conform to an outer circumferential periphery of the front end face of the metallic shell and a second pair of opposite sides separating the first pair of opposite sides.